IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS

In re Patent Application of:)
MCCARTHY ET AL.   )
)
Serial No. **10/779,402**   )
)
Confirmation No. **2799**   )
)
Filing Date: **FEBRUARY 13, 2004**   )
)
For: COMMUNICATIONS SYSTEM   )
    PROVIDING SERVER LOAD   )
    BALANCING BASED UPON WEIGHTED)
    HEALTH METRICS AND RELATED   )
    METHODS   )
)

Attorney Docket No.
  ID-504 (80226)

Examiner: **M. NGUYEN**

Art Unit: **2442**

APPELLANTS' APPEAL BRIEF

MS Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

    Submitted herewith is Appellants' Appeal Brief together with the requisite $540.00 large entity fee for filing a brief. If any additional extension and/or fee is required, authorization is given to charge Deposit Account No. **01-0484.**

(1) Real Party in Interest

    The real party in interest is Teamon Systems, Inc., assignee of the present application as recorded at reel 15009, frame 370.

(2) Related Appeals and Interferences

    At present there are no related appeals or

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interferences.

(3) Status of the Claims

      Claims 1-3, 5-6, 8-10, 12, 14-15, 17-18, 20, 22-28 are pending in the application. The Examiner's rejection of Claims 1-3, 5-6, 8-10, 12, 14-15, 17-18, 20, 22-28 is being appealed herein.

(4) Status of the Amendments

      All amendments have been entered and there are no further pending amendments. A copy of the claims involved in this appeal is attached hereto as Appendix A.

(5) Summary of the Claimed Subject Matter

      Independent Claim 1 is directed to a communications system that includes a plurality of servers connected together in a network for processing a plurality of different job types having respective different resource usage characteristics associated therewith (paragraphs 15-18, FIG. 1). Each server, after beginning execution of at least one job, determines its own respective health metric based upon the at least one job being executed thereby and weighs the health metric based upon the respective resource usage characteristic of the at least one job. (paragraphs 15-18, FIG. 1). The resource usage characteristic represents resources being consumed by the at least one job (paragraphs 15-18, FIG. 1). The servers map the weighted health metrics for different resource usage characteristics to a common scale (paragraphs 15-18, FIG. 1). The communications system includes a dispatcher for collecting the commonly scaled weighted

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health metrics from the servers by polling the servers for the weighted health metrics and distributing jobs to the servers based thereon (paragraphs 15-18, 24, FIG. 1).

Dependent Claim 2 recites that the resource usage characteristics comprise at least one processing utilization characteristic and at least one input/output utilization characteristic (paragraph 19).

Dependent Claim 3 recites that the communications system includes a knowledge base for cooperating with the dispatcher for storing the weighted health metrics (paragraph 22).

Dependent Claim 5 recites that the servers provide completed job results to the dispatcher, and that the weighted health metrics are provided to the dispatcher with the completed job results (paragraph 22).

Dependent Claim 6 recites that the communications system includes at least one load generator for generating the jobs for the servers and communicating the jobs to the dispatcher, and that the dispatcher further provides the completed job results to the at least one load generator (paragraph 24-26).

Dependent Claim 8 recites that the jobs related to e-mail processing (paragraph 24).

Independent Claim 9 is directed to a load distributor for a plurality of servers connected together in a network for processing a plurality of different job types having respective different resource usage characteristics associated therewith (paragraphs 15-18, FIG. 1). Each server, after beginning execution of at least one job, determines a respective health metric thereof based upon the at least one job being executed thereby and weights the health metric based upon the respective

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resource usage characteristic of the at least one job, the
resource usage characteristic representing resources being
consumed by the at least one job (paragraphs 15-18, FIG. 1). The
load distributor comprises a dispatcher for collecting the
commonly scaled weighted health metrics from the servers by
polling the servers for the weighted health metrics and
distributing jobs to the servers based thereon (paragraph 22).
The servers map the weighted health metrics for different
resource usage characteristics to a common scale (paragraphs 15-
18, FIG. 1). A knowledge base is for cooperating with the
dispatcher for storing the commonly scaled weighted health
metrics (paragraph 22).

Dependent Claim 10 recites that the resource usage
characteristics comprise at least one processing utilization
characteristic and at least one input/output utilization
characteristic (paragraph 19).

Dependent Claim 12 recites that the servers provide
completed job results to the dispatcher module, and that the
weighted health metrics are provided to the dispatcher with the
completed job results (paragraphs 24-26).

Independent Claim 14 recites a job distribution method
for a plurality of servers connected together in a network, the
servers for processing a plurality of different job types having
respective different resource usage characteristics associated
therewith paragraphs 15-18, FIG. 1). The method comprises
determining a respective health metric of each server after it
begins execution of at least one job based upon the at least one
job being executed thereby and weighting the health metric based
upon the respective resource usage characteristic of the at least
one job, the resource usage characteristic representing resources
being consumed by the at least one job (paragraphs 15-18, FIG.

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1). The method also includes polling the servers for the weighted health metrics and mapping the weighted health metrics for different resource usage characteristics to a common scale (paragraphs 15-18, FIG. 1). The method further includes distributing jobs to the servers based upon the commonly scaled weighted health metrics (paragraphs 15-18, FIG. 1).

Dependent Claim 15 recites that the resource usage characteristics comprise at least one processing utilization characteristic and at least one input/output utilization characteristic (paragraph 19).

Independent Claim 17 is directed to a non-transitory computer-readable medium storing computer-executable instructions for distributing jobs to a plurality of servers connected together in a network for processing a plurality of different job types having respective different resource usage characteristics associated therewith (paragraphs 15-18, FIG. 1). Each server, after beginning execution of at least one job, determines a respective health metric thereof based upon the at least one job being executed thereby and weighting the health metric based upon the respective resource usage characteristic of the at least one job, the resource usage characteristic representing resources being consumed by the at least one job (paragraphs 15-18, FIG. 1). The load distributor comprises a dispatcher for collecting the commonly scaled weighted health metrics from the servers by polling the servers for the weighted health metrics and distributing jobs to the servers based thereon (paragraphs 15-18, FIG. 1). The servers map the weighted health metrics for different resource usage characteristics to a common scale (paragraphs 15-18, FIG. 1). A knowledge base module for cooperating with the dispatcher module to store the weighted health metrics (paragraph 22).

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Dependent Claim 18 recites that the resource usage characteristics comprise at least one processing utilization characteristic and at least one input/output utilization characteristic (paragraph 19).

Dependent Claim 20 recites that the servers provide completed job results to the dispatcher module, and wherein the weighted health metrics are provided to the dispatcher module with the completed job results (paragraphs 24-26).

Dependent Claim 22 recites that the jobs related to e-mail processing (paragraph 24).

Dependent Claim 23 recites that the at least one load generator comprises an e-mail aggregation engine (paragraph 24).

Dependent Claim 24 recites that the servers also provide completed job results to the at least one load generator (paragraph 26).

Dependent Claim 25 recites that the at least one job comprises e-mail delivery (paragraph 24).

Dependent Claim 26 recites that the load distributor further comprises at least one load generator for generating the jobs for the servers and communicating the jobs to the dispatcher, and that the dispatcher further provides the completed job results to the at least one load generator (paragraphs 24-26).

Dependent Claim 27 recites that the at least one job comprises e-mail delivery (paragraph 24).

Dependent Claim 28 recites that the at least one job comprises e-mail delivery (paragraph 24).

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(6) Grounds of Rejection to be Reviewed On Appeal

Claims 1-3, 5-6, 8-10. 12, 14-15, 17-18, 20, and 22-28 stand rejected under 35 U.S.C. § 103(a) over Albert et al. in view of Dar et al.

(7) Argument

Independent Claims 1, 9, 14, and 17 Are Patentable Over Albert et al. in view of Dar et al.

The Examiner rejected independent Claims 1, 9, 14, and 17 over the combination of Albert et al. and Dar. Albert et al. is directed to a system and method for selecting a server to handle a connection. The method includes receiving at a service manager a connection request intercepted by a network device having a forwarding agent that is operative to receive instructions from a service manager, the connection request having been forwarded from the forwarding agent on the network device to the service manager.

A preferred server is selected at the service manager from among a group of available servers. The preferred server is the server that is to service the connection request. Instructions are sent from the service manager to the forwarding agent. The instructions include the preferred server that is to service the connection request so that the connection request may be forwarded from the network device to the preferred server. The servers send feedback messages to the service manager. The service manager uses these feedback messages to perform load balancing.

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The Examiner correctly recognized that Albert et al.
fails to teach: (1) different resource usage characteristics; and
(2) determination of a health metric of a server by that server
based upon resource usage characteristics after beginning
execution of a job. In an attempt to provide these critical
deficiencies of Albert et al., the Examiner looked to Dar.

Dar discloses a communications system including a
switch, clients, a network, and servers. The switch performs
typical routing functions such as network address translation
from virtual addresses to actual addresses, routing of packets,
and using access control lists. The switch also monitors the
health of the servers by monitoring and aggregating metrics
indicative of the health. The metrics include processor, memory,
and input/output metrics. This monitoring can be periodic.

Even a selective combination of Albert et al. and Dar,
however, fails to disclose a dispatcher for collecting the
commonly scaled weighted health metrics from the servers by
polling the servers for the weighted health metrics and
distributing jobs to the servers based thereon, as recited in
independent Claim 1, for example. The Examiner correlated the
service manager of Albert et al. to the dispatcher of independent
Claim 1, and the real machines of Albert et al. to the servers of
independent Claim 1, citing col. 29, lines 34-43, and col. 31
line 44 of Albert et al. in support of this feature.

Applicant respectfully submits that the Examiner's
interpretation of the prior art is flawed, however. The very
portion of Albert et al. cited by the Examiner explains that the
feedback messages may be sent <u>to</u> the service manager <u>from</u> either
an individual server, or from a representative server that
collects server feedback messages. <u>This is not polling</u>. As
understood by those of skill in the art, a service manager

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polling a server for data would mean that the service manager
repeatedly asks the server for the data, and the server sends the
data in response when it has the data to send. In sharp contrast
to this commonly understood definition of polling, the servers of
Albert et al. send their feedback messages to the service manager
without any request therefrom. The service manager of Albert et
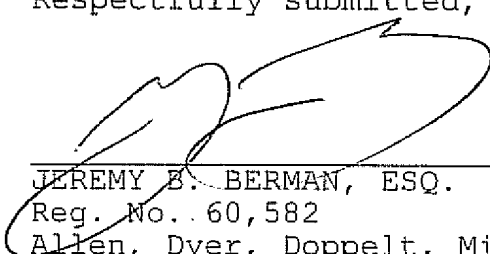al. is therefore not polling the servers for their feedback
messages.

  Consequently, Albert et al., and therefore the
combination of Albert et al. and Dar, fails to disclose a
dispatcher for collecting the commonly scaled weighted health
metrics from the servers by polling the servers for the weighted
health metrics and distributing jobs to the servers based
thereon, as recited in independent Claim 1. Independent Claim 1
is therefore patentable over the combination of Albert et al. and
Dar. Independent Claims 9, 14, and 17 contain similar
recitations, and are patentable over the combination of Albert et
al. and Dar for the same reasons. The dependent claims, which
recite yet further distinguishing features, are likewise
patentable and require no further discussion herein.

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CONCLUSIONS

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In view of the foregoing arguments, it is submitted that all of the claims are patentable over the prior art. Accordingly, the Board of Patent Appeals and Interferences is respectfully requested to reverse the earlier unfavorable decision by the Examiner.

Respectfully submitted,

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APPENDIX A - CLAIMS ON APPEAL
FOR U.S. PATENT APPLICATION SERIAL NO. 10/779,402

1. (Previously Presented) A communications system comprising:

a plurality of servers connected together in a network for processing a plurality of different job types having respective different resource usage characteristics associated therewith;

each server, after beginning execution of at least one job, determining a respective health metric thereof based upon the at least one job being executed thereby and weighting the health metric based upon the respective resource usage characteristic of the at least one job, the resource usage characteristic representing resources being consumed by the at least one job;

said servers mapping the weighted health metrics for different resource usage characteristics to a common scale; and

a dispatcher for collecting the commonly scaled weighted health metrics from said servers by polling said servers for the weighted health metrics and distributing jobs to said servers based thereon.

2. (Original) The communications system of Claim 1 wherein the resource usage characteristics comprise at least one processing utilization characteristic and at least one input/output utilization characteristic.

3. (Original) The communications system of Claim 1

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further comprising a knowledge base for cooperating with said
dispatcher for storing the weighted health metrics.

    4. (Cancelled)

    5. (Original) The communications system of Claim 1
wherein said servers provide completed job results to said
dispatcher, and wherein the weighted health metrics are provided
to said dispatcher with the completed job results.

    6. (Original) The communications system of Claim 5
further comprising at least one load generator for generating the
jobs for said servers and communicating the jobs to said
dispatcher; and wherein said dispatcher further provides the
completed job results to said at least one load generator.

    7. (Cancelled)

    8. (Original) The communications system of Claim 1
wherein the jobs relate to electronic mail (e-mail) processing.

    9. (Previously Presented) A load distributor for a
plurality of servers connected together in a network for
processing a plurality of different job types having respective
different resource usage characteristics associated therewith,
and each server, after beginning execution of at least one job,
determining a respective health metric thereof based upon the at
least one job being executed thereby and weighting the health
metric based upon the respective resource usage characteristic of
the at least one job, the resource usage characteristic
representing resources being consumed by the at least one job,

the load distributor comprising:

    a dispatcher for collecting the commonly scaled weighted health metrics from said servers by polling said servers for the weighted health metrics and distributing jobs to said servers based thereon;

    said servers mapping the weighted health metrics for different resource usage characteristics to a common scale; and

    a knowledge base for cooperating with said dispatcher for storing the commonly scaled weighted health metrics.

    10.   (Original) The load distributor of Claim 9 wherein the resource usage characteristics comprise at least one processing utilization characteristic and at least one input/output utilization characteristic.

    11.   (Cancelled)

    12.   (Original) The load distributor of Claim 9 wherein the servers provide completed job results to said dispatcher module, and wherein the weighted health metrics are provided to said dispatcher with the completed job results.

    13.   (Cancelled)

    14.   (Previously Presented) A job distribution method for a plurality of servers connected together in a network, the servers for processing a plurality of different job types having respective different resource usage characteristics associated therewith, the method comprising:

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determining a respective health metric of each server
after it begins execution of at least one job based upon the at
least one job being executed thereby and weighting the health
metric based upon the respective resource usage characteristic of
the at least one job, the resource usage characteristic
representing resources being consumed by the at least one job;

polling the servers for the weighted health metrics and
mapping the weighted health metrics for different resource usage
characteristics to a common scale; and

distributing jobs to the servers based upon the commonly
scaled weighted health metrics.

15.   (Original) The method of Claim 14 wherein the
resource usage characteristics comprise at least one processing
utilization characteristic and at least one input/output
utilization characteristic.

16.   (Cancelled)

17.   (Previously Presented) A non-transitory computer-
readable medium storing computer-executable instructions for
distributing jobs to a plurality of servers connected together in
a network for processing a plurality of different job types
having respective different resource usage characteristics
associated therewith, and each server, after beginning execution
of at least one job, determining a respective health metric
thereof based upon the at least one job being executed thereby
and weighting the health metric based upon the respective
resource usage characteristic of the at least one job, the
resource usage characteristic representing resources being
consumed by the at least one job, the load distributor

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comprising:

    a dispatcher for collecting the commonly scaled weighted
        health metrics from said servers by polling said
        servers for the weighted health metrics and
        distributing jobs to said servers based thereon;

    the servers mapping the weighted health metrics for
        different resource usage characteristics to a
        common scale; and

    a knowledge base module for cooperating with said dispatcher
        module to store the weighted health metrics.

18.   (Previously Presented) The non-transitory
computer-readable medium of Claim 17 wherein the resource usage
characteristics comprise at least one processing utilization
characteristic and at least one input/output utilization
characteristic.

19.   (Cancelled)

20.   (Previously Presented) The non-transitory
computer-readable medium of Claim 17 wherein the servers provide
completed job results to said dispatcher module, and wherein the
weighted health metrics are provided to said dispatcher module
with the completed job results.

21.   (Cancelled)

22.   (Previously Presented) The communications system
of Claim 1, wherein the at least one job comprises e-mail
delivery.

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23. (Previously Presented) The communications system of Claim 6, wherein said at least one load generator comprises an e-mail aggregation engine.

24. (Previously Presented) The communications system of Claim 6, wherein said servers also provide completed job results to said at least one load generator.

25. (Previously Presented) The load distributor of Claim 9, wherein the at least one job comprises e-mail delivery.

26. (Previously Presented) The load distributor of Claim 12 further comprising at least one load generator for generating the jobs for said servers and communicating the jobs to said dispatcher; and wherein said dispatcher further provides the completed job results to said at least one load generator.

27. (Previously Presented) The method of Claim 14, wherein the at least one job comprises e-mail delivery.

28. (Previously Presented) The non-transitory computer-readable medium of Claim 17, wherein the at least one job comprises e-mail delivery.

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APPENDIX B – EVIDENCE APPENDIX

PURSUANT TO 37 C.F.R. § 41.37(c)(1)(ix)

None.

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APPENDIX C – RELATED PROCEEDINGS APPENDIX
PURSUANT TO 37 C.F.R. § 41.37(c)(1)(x)

None.